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By-Doty, Barbara A.

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Using data gathered from 114 graduates of North Central College (Illinois) between 1961-66 who held teaching positions in public schools, the academic, personal, and teacher characteristics of women who began teaching after age 35 were investigated. Data analyses indicated that the mature women (mean age 40) exhibited more academic ability, better personal adjustment, and greater teaching ability than two groups of younger women teachers (mean age 22). Relative to a random sample of younger women teachers, mature teachers were characterized by higher cumulative and education course grade point averages (GPA), and higher American College Entrance Examination (ACE) scores. Relative to both a random group and a GPA-matched group of younger teachers, mature teachers achieved more favorable Minnesota Multiphasic Personality Inventory (MMPI) scores, were rated more favorably by college faculty and teaching supervisors, and were viewed as highly effective teachers by the principals employing them. However, many evaluations by teaching supervisors were negatively correlated with principals' ratings of mature teachers, indicating the need for a more accurate method for the assessment and prediction of teacher effectiveness. Further research should be conducted to determine whether these findings can be generalized. (A 16-item reference list is included.) (Author/SM)

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A Study of the Characteristics of Women Who
Begin Teaching After Age Thirty-five.

Dr. Barbara A. Doty

North Central College

Naperville, Illinois 60540

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Summary

The problem under study was to determine how women who enter teaching when they are 35 years of age or older function as professional teachers. Although a large number of mature women now begin their teaching careers after the age of 35, little information is available regarding their effectiveness as teachers.

The specific objectives investigated were:

- 1) Determinations of academic, personal, and teacher characteristics of these mature teachers;
- 2) Comparisons of the teacher effectiveness and other characteristics of mature and younger teachers;
- 3) Selection of measures which best predict the future teacher performance of mature women.

The sample consisted of 51 mature (mean age = 40) and 63 younger (mean age = 21) teachers who matriculated at a small liberal arts college and held teaching positions in public schools. These data were collected for each group:

- a) Academic characteristics: cumulative GPA, GPA in required education courses, ACE scores.
- b) Teacher characteristics: judgments relevant to a variety of teacher behaviors by college faculty (major area professors), critic teachers (practice teaching supervisors), and principals of schools employing the subjects. Principal's ratings were the criterion of teaching effectiveness.
- c) Personality characteristics: MMPI scores and background data.

The major findings were as follows:

- 1) Mature teachers (over age 35 at the time they begin teaching) performed significantly better than a random sample of younger teachers on all measures of academic achievement.
- 2) Mature teachers were rated significantly more favorably than younger teachers on all attributes considered by their employing principals.
- 3) Mature teachers were usually evaluated more favorably than younger teachers by their major professors and critic teachers although these differences were frequently not statistically significant. One exception to this finding was that critic teachers rated young teachers matched on GPA with mature teachers more favorably than they rated mature women.

- 4) Mature teachers obtained MMPI scores indicating they are better adjusted personally than younger teachers. As a group, older teachers are sociable, even-tempered, balanced individuals who are relatively free of symptoms of personality disturbances.
- 5) Ratings of mature teachers by their critic teachers were frequently negatively correlated with principals evaluations.
- 6) None of the measures of academic, teacher or personality characteristics accurately predicted the criterion of teacher effectiveness for mature teachers.

The findings indicate that women who begin teaching after the age 35 are superior to younger women with respect to academic achievement, personal adjustment and teaching ability. Employing principals view mature women as highly effective teachers. Nevertheless, the best predictors of mature women's teaching ability (principal's ratings) are negative ratings of their practice teaching behavior.

Further research should be conducted to determine whether these findings can be generalized to a broader sample of mature teachers. Possibly more mature women should be encouraged to enter teaching and professional educators should develop more favorable views toward these teachers.

Introduction

The primary purpose of this project was to determine how some women who begin their careers after the age of 35 function as professional classroom teachers. College enrollment data suggest that mature women are returning to undergraduate campuses in rising numbers, either to begin or to complete their higher education (4). A substantial proportion of these women then begin teaching. Little information is available regarding the type of women who begin teaching after the age of 35, or her success as a teacher. The present project was conducted to provide some of these data. A secondary purpose was to establish criteria for the prediction of success in teaching of both young and more mature women teachers.

Numerous higher institutions have developed special programs and services to encourage or assist mature women students (4). This assistance ranges from complete psychological testing and counseling services at Oakland University to academic credit for "life experience" at Mundelein College. Some institutions have begun programs specifically to encourage the older woman's interest in teaching (13, 15, 16). It is already clear that a number of these mature students plan and enter careers in teaching at the elementary or secondary levels (5, 9). Research by the present investigator indicated that 82 per cent of undergraduate women over 30 planned to teach following graduation from North Central College (5).

The prediction of success in teaching is obviously a major research concern. Yet, it is still difficult to accurately predict even the performance of young teachers from prior measures. Even less information is available regarding the older student who begins her teaching career after the age of 35.

Methods

1. Sample: The subjects were 114 women teachers who received B.A. degrees at North Central College between 1961 and 1966, and held full-time teaching positions in public schools for at least one academic year subsequent to graduation. Subjects were divided between 2 groups on the basis of their age designated as young teachers (N=63), meaning they were 21 to 24 year of age, or mature teachers (N=51), meaning they were 35 to 45 year of age when they entered teaching. The actual mean ages of these 2 groups were 22.2 and 40.0 respectively. The standard deviations of these means were 1.1 and 4.6 respectively.

All subjects were middle-class, Caucasians, in good physical health, who lived and taught in suburban Chicago areas. A majority of the subjects' families (father or spouse) were engaged in business or professional occupations, had some college education, and owned their homes. Roughly half of the women in each age group taught at the elementary grade level, and half were employed in secondary schools. The data for both levels within each age group were combined because teacher characteristics did not vary as a function of teaching level.

The sample of young teachers was divided into two subsamples on the basis of cumulative GPA. This was done because a random sample of young teachers yielded a significantly lower GPA than that obtained by mature teachers. One sample of young teachers was a simple random one (N=30), and was unmatched with the GPA of older teachers. The second sample (N=33) was matched with mature teachers on the basis of GPA. The data for each sample of young teachers were analyzed separately.

2. Data and instrumentation: Most of the data were collected during routine testing procedures at North Central College. Information relevant to the following academic, teacher, and personality characteristics was collected.

Academic characteristics were assessed by means of:

- a) American College Entrance Examination (ACE) percentile scores obtained at the time of college admission.
- b) Cumulative grade point average (GPA) obtained in all undergraduate courses.
- c) Cumulative grade point average obtained in 4 professional education courses required of education majors: These courses were American Public Education, Educational Psychology, Principles of Teaching, and Teaching Methods.

Teacher characteristics were assessed by means of:

a) Major professor's ratings. All teachers were rated during their Junior year on a number of personal and academic variables by a professor teaching in their major field of study. Each of 17 attributes was rated on a 5-point scale. A sample copy of this scale is presented in Appendix A.

b) Critic teacher's ratings of student teachers. Critic, or supervising teachers were professional women teachers employed on a full-time basis in public school systems. Critic teachers rated subjects upon completion of their practice teaching, under the former's supervision. Practice teaching consisted of 8 to 10 weeks of full-time, in-service training. The rating scale consisted of 5-point ratings on 22 variables. A sample scale is presented in Appendix B.

c) Principal's ratings of professional teachers. Principal's of schools in which the subjects were employed also rated these subjects by means of the same scale used by critic teachers. Principal's ratings were made after the subject was employed for at least 9 months in the principal's school.

d) Reliability data. Test-retest reliabilities over a one-week interval were determined for the 3 rating scales employed in this study. Coefficients of .92 to 1.00 were obtained for all ratings within each of these scales. Thus, the ratings appeared to be highly consistent over a short period of time. All ratings reported below are the original ones made, since they appear stable enough to represent both sets of ratings made on the same individual.

3. Data analyses: Differences between all possible pairs of subject groups on each variable were analyzed by means of t-tests and Mann-Whitney U tests. Relationships among variables for each subject group were subjected to Pearson-Product Moment and Phi correlational analyses. Because the non-parametric procedures produced results significant at the same levels as the parametric methods, only the latter are reported here. The similarity of significant findings yielded by the two approaches suggest that an assumption can be made that interval level measurement underlies these data.

Results

1. Comparisons of teacher groups.

a) Comparisons of matched-groups of young and mature women teachers.

Differences between teachers in the young and mature age groups were analyzed by means of t-tests for matched samples for each of the variables under investigation. Age groups were matched on the basis of cumulative grade point average (GPA) achieved in academic work undertaken at North Central College. The mean values obtained by each group on each variable investigated, together with the standard deviations of these means, the t value obtained between means, and the significance level of each t value are summarized in tabular form as indicated below.

The mean over-all GPAs for young and mature women were 2.24 and 2.14 respectively, based on a 3-point grading system. Mean GPAs in required education courses were 2.22 and 2.18 respectively, for these two groups. Mean ACE scores were 67.1 and 64.6 for young and mature subjects respectively. Thus, both groups were above average on these three measures of academic achievement.

Young and mature women teachers did not differ from each other with respect to GPA (the matching variable), GPA achieved in required education courses, or scores on the American College Entrance Examination (ACE). The GPA achieved in required education courses did not include the grade received from the critic teacher for 6 to 8 academic hours of student teaching. The student teaching grade was omitted from this analysis to avoid contaminating the relationship between grades in required education courses and critic teacher ratings of practice teaching performance in predictions of teacher success. These groups did differ significantly ($P < .001$) with respect to marital status and number of children. All of the mature subjects were married and they had more children than did younger subjects. These findings are summarized in Table 1.

Major professor's ratings of teacher success.

Young and mature women received very similar evaluations of teaching potential by their major professors. These evaluations consisted of ratings on 17 separate variables relevant to teacher behaviors. Scholarship was the only variable on which the two groups of subjects differed significantly ($P < .01$). Older women were viewed as possessing a higher degree of scholastic aptitude (mean rating = 1.66) than younger women (mean rating = 1.33). This evaluation does not reflect

Table 1.

Results of t-test Comparisons of Young, Matched-Group
Teachers and Mature Teachers.

<u>Variable</u>	<u>Means</u>		<u>S. D.</u>		<u>t value</u>	<u>Significance Level</u>
	Young	Mature	Young	Mature		
Age	22.2726	40.0391	1.1353	4.6227	25.9790	p<.001
Cum. GPA	2.2423	2.1469	.3302	.4280	-1.1342	
Ed. GPA	2.2271	2.1822	.3636	.4331	- .5055	
ACE	67.1514	64.6429	23.6028	18.9340	- .5051	
Marital Status*	1.2423	2.000	.4284	0	10.0014	p<.001
No. of Children	.0605	2.4900	.3427	1.1776	13.7078	p<.001

*1=single, 2=married

a difference between the 2 groups with respect to grade point average, since they were matched on this variable. It is interesting to note that older women were rated more favorably than younger women (lower ratings are more favorable) on all variables except personal appearance and cooperativeness. However, ratings of potential teacher performance by major professors do not discriminate young from mature women students. This failure may be a result of a tendency to rate all teacher candidates rather positively. These data are presented in Table 2.

Critic teacher ratings of student teaching performance.

Unlike the previous findings for major professor ratings, critic teachers tended to give younger women more favorable ratings than older women. Younger women received significantly more favorable ratings than older subjects on conscientiousness of pupils ($P < .001$), health ($P < .05$), and ability to decide upon appropriate classroom objectives ($P < .05$). Older women received significantly better ratings only on intelligence ($P < .05$). Critic teacher ratings of 18 other student teacher characteristics did not differ significantly between young and mature subjects. Both groups were given rather positive ratings by their supervising teachers. These findings are summarized in Table 3.

Principal's ratings of teacher performance.

As noted previously, the criterion of teacher success in this study was the employing principal's ratings of the subject's professional teacher performance after a minimum of nine months of full-time employment. Principal's ratings, which are summarized in Table 4, very clearly differentiate between age groups. The older women teachers received significantly more favorable ratings than younger subjects on all the variables under consideration. These findings are especially striking in view of the similarity across age groups of ratings by major professors and critic teachers. Apparently, employing principals view mature women as superior teachers in nearly every respect. A halo effect thus appears in these ratings, but it does not account for the basic attributes contributing to this favorable attitude toward older women teachers.

M.M.P.I. scores.

Relative to younger women, mature subjects obtained significantly lower scores on the MMPI clinical scales pertaining to hysteria ($P < .01$), psychopathy ($P < .001$), psychasthenia ($P < .05$), schizophrenia ($P < .001$), and social introversion ($P < .001$). For these data, lower scores indicate

Table 2.

Major Professor's Ratings of Young, Matched-Group
Teachers and Mature Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Young</u>	<u>Mature</u>	<u>Young</u>	<u>Mature</u>		
1. Scholar- ship	1.6665	1.3332	.5317	.5482	-2.7350	P<.01
2. Use of English	1.6665	1.4116	.7246	.5997	-1.6589	
3. Attitude toward work	1.4544	1.3136	.5553	.5418	-1.1304	
4. Promptness & dependability	1.4847	1.324	.5570	.5223	- .9121	
5. Coopera- tiveness	1.3938	1.4508	.4885	.5354	.4961	
6. Leadership	1.5756	1.4900	.6044	.7763	- .5586	
7. Judgment	1.6059	1.4900	.6484	.7240	- .7539	
8. Tact	1.7271	1.4704	.6638	.6671	-1.7046	
9. Initiative	1.5756	1.3724	.6044	.5926	-1.4961	
10. Industrious- ness	1.4241	1.4116	.5520	.5661	- .0990	
11. Force of Character	1.6362	1.4508	.5937	.6358	-1.3412	
12. Social Qualities	1.5756	1.3724	.7396	.5586	-1.3300	
13. Personality	1.5756	1.4900	.6526	.6061	- .5954	
14. Voice	1.6362	1.4312	.6882	.6642	-1.3335	
15. Personal Appearance	1.4544	1.4704	.4978	.6055	.1302	
16. Personal Habits	1.4847	1.2940	.4996	.5347	-1.6398	
17. Probable teaching ability	1.5756	1.4900	.6526	.6677	- .5740	

Table 3.

Critic Teacher's Ratings of Young, Matched-Group
Teachers and Mature Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Young</u>	<u>Mature</u>	<u>Young</u>	<u>Mature</u>		
1. Intelligence	1.4847	1.2155	.4996	.4111	-2.5454	P<.05
2. Reliability	1.2726	1.2155	.4452	.4111	- .5834	
3. Emotional Stability	1.3029	1.4704	.5212	.6055	1.3314	
4. Initiative	1.5150	1.4116	.6089	.5303	- .7880	
5. Attractiveness	1.3332	1.2155	.4713	.4563	-1.1166	
6. Considerate- ness	1.0908	1.4116	.2873	.5661	3.3828	P<.001
7. Enthusiasm	1.3938	1.2351	.5470	.4680	-1.3540	
8. Adaptability	1.3635	1.4508	.5937	.5354	.6744	
9. Sense of humor	1.4544	1.4312	.5553	.5688	- .1827	
10. Voice	1.6059	1.5097	.5470	.6376	- .7274	
11. Health	1.3029	1.5881	.5212	.5909	2.1232	P<.05
12. Knowledge of subject matter	1.3332	1.4900	.4713	.6677	1.2449	
13. Professional Attitudes	1.2120	1.3136	.4087	.5418	.9645	
14. Knowledge of principles and techniques of teaching	1.4241	1.3724	.5520	.5223	- .4223	
15. Understanding pupil growth and development	1.5150	1.4508	.5570	.5708	- .5041	
16. Ability in deciding on appropriate objectives	1.2120	1.4900	.4771	.6376	2.2512	P<.05

Table 3. Con't

Critic Teacher's Ratings of Young, Matched-Group
Teachers and Mature Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Young</u>	<u>Mature</u>	<u>Young</u>	<u>Mature</u>		
17. Ability in using a variety of instruct. mat.	1.3635	1.5685	.5402	.6023	1.6017	
18. Ability in selecting and planning a variety of activities	1.3938	1.6273	.4885	.5926	1.9400	
19. Ability in directing learning activities	1.4544	1.5489	.4978	.4974	.8386	
20. Ability in teacher-pupil relationships	1.4241	1.6469	.5520	.7090	1.5921	
21. Ability in classroom management	1.2726	1.4312	.5087	.5688	1.3142	
22. Ability in evaluating pupil achievement	1.3635	1.5097	.5402	.5729	1.1672	

Table 4.

Principal's Ratings of Young, Matched-Group
Teachers and Mature Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Young</u>	<u>Mature</u>	<u>Young</u>	<u>Mature</u>		
1. \neq	2.2726	1.5489	.8967	.6659	-3.9245	P<.001
2.	2.0908	1.5293	.9648	.7501	-2.7952	P<.01
3.	2.3332	1.4704	.8760	.5722	-4.9374	P<.001
4.	2.3029	1.6665	.8697	.7837	-3.3574	P<.001
5.	2.1514	1.7253	.8208	.8418	-2.2700	P<.05
6.	2.0908	1.4508	.9329	.6358	-3.4068	P<.001
7.	2.0908	1.5489	.8297	.7491	-2.9947	P<.01
8.	2.2726	1.6077	.8623	.6590	-3.7209	P<.001
9.	2.3332	1.7253	1.0346	.8182	-2.8085	P<.01
10.	2.1514	1.5685	.7434	.7208	-3.5042	P<.001
11.	2.0908	1.5489	.9957	.6659	-2.7142	P<.01
12.	2.1514	1.5097	.9883	.6964	-3.1992	P<.01
13.	2.1817	1.5097	.9029	.6376	-3.6652	P<.001
14.	2.3332	1.7253	.7653	.6881	-3.6472	P<.001
15.	2.5150	1.6273	.9572	.6847	-4.5527	P<.001
16.	2.6968	1.6273	.7970	.7398	-6.0936	P<.001
17.	2.2120	1.6665	.8440	.7319	-3.0036	P<.01
18.	2.2120	1.7646	.9130	.7562	-2.3105	P<.05
19.	2.3635	1.8430	.9150	.7763	-2.6622	P<.01
20.	2.3938	1.6665	.9190	.7837	-3.6977	P<.001
21.	2.3332	1.7057	.8760	.7486	-3.3447	P<.001
22.	2.3029	1.8430	.8697	.7240	-2.4894	P<.05

\neq Names of variables may be obtained from Table 3.

more favorable personality adjustment. Thus, mature women obtained scores indicating that they exhibit fewer characteristics than younger women of hysterical defenses, psychopathic deviancy, psychasthenic neurosis, or schizophrenic tendencies. And, mature women exhibited more social extroversion or gregariousness than younger subjects. Mature subjects also had more favorable scores on all other MMPI scales except the femininity of interests and hypomania scales, but none of these differences reached statistical significance. The more deviant scores obtained by younger women are probably due in part to the fact that college students make higher scores on many MMPI scales than do older persons. These data are presented in Table 5.

b) Comparisons between young, unmatched-group teachers and mature teachers.

Differences between young teachers unmatched with mature teachers with respect to cumulative GPA, and the mature teachers were analyzed by means of t-tests for independent samples for each variable investigated. The means obtained by each group on each of these variables, together with the standard deviations of these means, the t-value obtained for the difference between each pair of means, and the significance level of each t-value are presented below.

These groups differed significantly with respect to cumulative GPA and GPA in education courses. The mean cumulative GPAs were 1.64 for young teachers and 2.14 for mature teachers ($t=5.10$, $P<.001$). GPAs achieved in education courses by these groups were 1.85 and 2.18 ($t=3.15$, $P<.01$). These teacher groups did not differ significantly on ACE scores. Like the matched young teacher group, these young teachers were less likely to be married and had fewer children than the older teachers. Please see Table 6.

Major professor ratings of teacher success.

Young teachers in this sample were rated much less positively than mature women by their major professors. These findings depart sharply from the results of comparisons between young and mature teachers matched on the basis of cumulative GPA. Mature teachers received significantly more favorable ratings than young teachers on nearly every variable on which they were evaluated, including scholarship, personal appearance and probable teaching ability. The only ratings which failed to discriminate between the 2 groups was cooperativeness. These data are summarized in Table 7.

Table 5.

MMPI Scores Obtained by Young, Matched-Group
Teachers and Mature Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Young</u>	<u>Mature</u>	<u>Young</u>	<u>Mature</u>		
1. Hysteria	15.0000	13.5293	2.3093	1.6251	-3.1389	P<.01
2. Depression	21.7574	20.7449	3.1432	1.9983	-1.6241	
3. Hypochon- driasis	21.6665	20.8038	1.9795	2.0292	-1.9062	
4. Psychopathy	21.3938	19.6469	1.5750	1.5695	-4.9057	P<.001
5. Femininity	36.3938	36.4508	1.7396	2.8096	.1134	
6. Paranoia	10.2423	10.1567	1.0738	4.1978	- .1373	
7. Psychas- thenia	28.2120	26.2351	2.3836	5.5714	-2.2124	P<.05
8. Schizo- phrenia	28.2726	24.3724	3.2404	2.8625	-5.5601	P<.001
9. Hypomania	20.0000	20.0979	2.1601	1.5242	.2234	
10. Social introversion	29.0604	25.7645	3.6756	4.6592	-3.5615	P<.001

Table 6.

Results of t-test Comparisons of Mature Teachers
and Young, Unmatched-Group Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Mature</u>	<u>Young</u>	<u>Mature</u>	<u>Young</u>		
Age	40.0391	22.3665	4.6227	.9479	26.1024	P<.001
Cum. GPA	2.1469	1.6465	.4280	.4152	5.1037	P<.001
Ed. GPA	2.1822	1.8598	.4331	.4400	3.1565	P<.01
ACE	54.6469	53.8998	18.9340	25.7775	1.9594	
Marital Status*	2.0000	1.1665	.00	.3725	.8334	P<.001
No. of Children	2.4900	.1998	1.1776	.5415	11.7710	P<.001

*1=single, 2=married

Table 7.

Major Professor's Ratings of Mature Teachers and Young,
Unmatched-Group Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Mature</u>	<u>Young</u>	<u>Mature</u>	<u>Young</u>		
1. \neq	1.3332	2.1332	.5482	.8054	-4.7482	P<.001
2.	1.4116	2.1665	.5997	.8594	-4.1765	P<.001
3.	1.3136	1.7665	.5418	.6673	-3.1081	P<.01
4.	1.3724	2.0665	.5223	.9284	-3.7003	P<.001
5.	1.4508	1.7332	.5354	.6797	-1.9183	
6.	1.4900	2.0665	.7763	.8136	-3.0864	P<.01
7.	1.4900	2.0000	.7240	.8562	-2.6960	P<.01
8.	1.4704	2.0000	.6671	.7301	-3.2053	P<.01
9.	1.3724	1.9665	.5926	.7062	-3.8168	P<.001
10.	1.4116	1.8998	.5661	.9432	-2.5347	P<.05
11.	1.4508	2.1332	.6358	.7179	-4.2431	P<.001
12.	1.3724	2.0000	.5586	.8163	-3.6705	P<.001
13.	1.4900	2.0332	.6061	.6573	-3.6414	P<.001
14.	1.4312	2.0665	.6642	.7716	-3.7076	P<.001
15.	1.4704	1.8665	.6055	.6698	-2.6226	P<.01
16.	1.2940	1.9332	.5347	.7271	-4.1298	P<.001
17.	1.4900	2.1665	.6677	.9338	-3.4258	P<.001

\neq Names of variables may be obtained from Table 2.

Critic teacher ratings of student teaching performance.

Critic teachers also evaluated the young teachers in this group less favorably than they rated mature teachers. These ratings are presented in Table 8. While both groups were rated rather positively, older teachers received significantly more favorable ratings on scholarship, consideration, and knowledge of subject matter. Ratings on other teacher characteristics did not differ between groups.

Principal's ratings of teacher performance.

These evaluations, like the previous ratings of major professors and critic teachers, are more favorable for mature than for young teachers. There was more overlap in the ratings received by these teacher groups than there was between mature, and young, matched-group teachers. Nevertheless, mature teachers were rated significantly more favorably than young teachers unmatched for GPA on a majority of the teacher characteristics under consideration. Please refer to Table 9 for a summary of these findings.

M.M.P.I. scores.

Mature teachers obtained more favorable MMPI scores than younger, unmatched teachers on all clinical subscales except the femininity of interests and psychasthenia scales. Mature teachers had significantly lower (more favorable adjustment) scores than young teachers on the hysteria, hypochondriasis, psychopathy, schizophrenia, hypomania and social introversion subscales. These data suggest that mature teachers display fewer symptoms of personal maladjustment than do younger women. And, the former teachers appear to be the more socially extroverted group. (Table 10)

c) Comparisons between matched and unmatched groups of young teachers.

Since the previous results of comparisons between young and mature teachers varied as a function of matching age groups on the basis of cumulative GPA, comparisons between the 2 groups of young teachers are useful. These t-test comparisons are summarized in tabular form as indicated below.

The young unmatched group of teachers constituted a simple random sample of all young women teachers matriculated at North Central College. This group obtained a significantly ($P < .001$) lower mean GPA, lower ACE scores ($P < .05$) and GPA in required education courses ($P < .001$) than young, matched-group teachers. These data can be found in Table 11.

Table 8.

Critic Teacher's Ratings of Mature Teachers and Young,
Unmatched-Group Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Mature</u>	<u>Young</u>	<u>Mature</u>	<u>Young</u>		
1. \neq	1.2155	1.8998	.4111	.6505	-5.1036	P<.001
2.	1.2155	1.4665	.4111	.6698	-1.8278	
3.	1.4704	1.3998	.6055	.5536	.5275	
4.	1.4116	1.6665	.5303	.6991	-1.6999	
5.	1.2155	1.4332	.4563	.4954	-1.9369	
6.	1.4116	1.1332	.5661	.3398	2.7305	P<.01
7.	1.2351	1.3665	.4680	.5466	-1.0841	
8.	1.4508	1.5998	.5354	.6632	-1.0304	
9.	1.4312	1.3998	.5688	.6632	.2134	
10.	1.5097	1.7332	.6376	.6288	-1.5147	
11.	1.5881	1.4332	.6909	.5586	1.0868	
12.	1.4900	1.8665	.6677	.6698	-2.4105	P<.05
13.	1.3136	1.1665	.5418	.3725	1.4247	
14.	1.3724	1.6332	.5223	.6573	-1.8277	
15.	1.4508	1.5665	.5708	.6673	- .7822	
16.	1.4900	1.6332	.6376	.7950	- .8276	
17.	1.5685	1.5332	.6023	.5616	.2621	
18.	1.6273	1.5000	.5926	.5626	.9510	
19.	1.5489	1.5998	.4974	.6109	- .3812	
20.	1.6569	1.5665	.7090	.5586	.5572	
21.	1.4312	1.4332	.5688	.7155	- .0128	
22.	1.5097	1.4665	.5729	.5616	.3270	

\neq Names of variables may be obtained from Table 3.

Table 9.

Principal's Ratings of Mature Teachers and Young,
Unmatched-Group Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Mature</u>	<u>Young</u>	<u>Mature</u>	<u>Young</u>		
1. \neq	1.5489	2.0998	.6659	.7894	-3.1614	P<.01
2.	1.5293	1.8332	.7501	.7780	-1.6953	
3.	1.4704	1.9665	.5722	.7519	-3.0736	P<.01
4.	1.6665	2.1998	.7837	.7482	-3.0002	P<.01
5.	1.7253	1.6998	.8418	.8224	.1316	
6.	1.4508	1.8332	.6358	.7780	-2.2469	P<.05
7.	1.5489	1.9665	.7491	.9121	-2.0901	P<.05
8.	1.6077	1.9332	.6590	.8136	-1.8334	
9.	1.7253	1.8998	.8182	.7460	-.9666	
10.	1.5685	2.0000	.7208	.8163	-2.3613	P<.05
11.	1.5489	2.0000	.6659	1.1831	-1.8866	
12.	1.5097	2.1332	.6964	.8054	-3.4813	P<.001
13.	1.5097	1.8665	.6376	.8843	-1.9043	
14.	1.7253	2.0998	.6881	.7460	-2.2118	P<.05
15.	1.6273	2.1998	.6847	.8325	-3.1380	P<.01
16.	1.6273	2.5000	.7398	.8464	-4.6210	P<.001
17.	1.6665	2.1998	.7319	.7915	-2.9662	P<.01
18.	1.7646	2.2332	.7562	.8824	-2.3945	P<.05
19.	1.8430	2.3332	.7763	.9066	-2.4387	P<.05
20.	1.6665	2.3332	.7837	.9774	-3.1346	P<.01
21.	1.7057	2.0998	.7486	.9779	-1.8746	
22.	1.8430	2.1998	.7240	.7915	-1.9916	P<.05

\neq Names of variables may be obtained from Table 3.

Table 10.

MMPI Scores Obtained by Mature Teachers and
Young, Unmatched-Group Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Mature</u>	<u>Young</u>	<u>Mature</u>	<u>Young</u>		
1. \neq	13.5293	15.4332	1.6251	1.8739	-4.5652	P<.001
2.	20.7449	21.0998	1.9983	2.4676	- .6592	
3.	20.8038	22.0998	2.0292	1.8501	-2.8950	P<.01
4.	19.6469	21.3332	1.5695	1.4680	-4.7966	P<.001
5.	36.4508	35.9332	2.8096	1.9820	.9556	
6.	10.1567	10.1665	4.1978	1.0353	- .0157	
7.	26.2351	26.4332	5.5714	5.3582	- .1560	
8.	24.3724	27.0000	2.8625	2.8981	-3.9015	P<.001
9.	20.0979	19.2332	1.5242	1.9266	2.0701	P<.05
10.	25.7645	28.3998	4.6592	3.2720	-2.9401	P<.01

\neq Names of variables may be obtained from Table 5.

Table 11.

Results of t-test Comparisons of Young, Matched-
and Unmatched-Group Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Matched</u>	<u>Unmatched</u>	<u>Matched</u>	<u>Unmatched</u>		
Age	22.2726	22.3665	1.1353	.9479	- .3517	
Cum. GPA	2.2423	1.6465	.3302	.4152	6.1594	P<.001
Ed. GPA percentile	2.2271	1.8598	.3636	.4400	3.5322	P<.001
ACE	67.1514	53.8998	23.6028	25.7775	2.0868	P<.05
Marital Status*	1.2423	1.1665	.4284	.3725	.07579	
No. of Children	.0605	.1998	.3427	.5415	-1.1863	

*1=single, 2=married

Major professor ratings of teacher success.

These samples of young teachers received significantly different ratings by their major professors on all the variables under consideration except tact. The matched group was rated more favorably on every characteristic under consideration.

Critic teacher ratings of student teaching performance.

While critic teachers also rated the matched group of young teachers more favorably than they rated the unmatched group, none of these differences in ratings reached significance except for ratings of intelligence and knowledge of subject matter. Thus, critic teachers did not perceive these groups as differing from one another except for scholarship.

Principal's ratings of teacher performance.

Principals consistently rated the young unmatched group of teachers more favorably than they rated the matched group. However, none of these differences were significant except the rating of personal attractiveness ($t=2.14$, $P<.05$).

M.M.P.I. scores.

None of the MMPI clinical subscales discriminated between these groups of young teachers. The unmatched group typically made slightly more favorable scores on these scales than did the matched group. These results, along with the above findings for comparisons between young teacher groups are presented in Tables 12 through 15.

2. Predictions of teaching effectiveness.

Pearson product-moment correlations: All variables under evaluation were correlated with the criterion of teacher success, principal's ratings, to determine which of these variables was the best predictor of this measure. Separate correlations were done for the mature, young unmatched, and young matched groups of teachers. The significance of the differences between correlations for each group was also determined. In addition, all principal's ratings were inter-correlated. Correlations significant at the 5 per cent level or better are presented in tables as indicated below. Only those correlations which are significant at beyond the one per cent level will be discussed in the text.

a) Mature teachers.

The most striking findings for mature teachers were that evaluations of these subjects by major professors,

Table 12.

Major Professor's Ratings of Young Matched- and
Unmatched-Group Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Matched</u>	<u>Unmatched</u>	<u>Matched</u>	<u>Unmatched</u>		
1. \neq	1.6665	2.1332	.5317	.8054	-2.6416	P<.01
2.	1.6665	2.1665	.7246	.8594	-2.4430	P<.05
3.	1.4544	1.7665	.5553	.6673	-1.9739	P<.05
4.	1.4847	2.0665	.5570	.9284	-2.9300	P<.01
5.	1.3938	1.7332	.4885	.6797	-2.2189	P<.05
6.	1.5756	2.0665	.6044	.8136	-2.6525	P<.01
7.	1.6059	2.0000	.6484	.8562	-2.0099	P<.05
8.	1.7271	2.0000	.6638	.7301	-1.5212	
9.	1.5756	1.9665	.6044	.7062	-2.3105	P<.05
10.	1.4241	1.8998	.5520	.9432	-2.3723	P<.05
11.	1.6362	2.1332	.5937	.7179	-2.9288	P<.01
12.	1.5756	2.0000	.7396	.8163	-2.1193	P<.05
13.	1.5756	2.0332	.6526	.6573	-2.7242	P<.01
14.	1.6362	2.0665	.6882	.7716	-2.2889	P<.05
15.	1.4544	1.8665	.4978	.6698	-2.7043	P<.01
16.	1.4847	1.9332	.4996	.7271	-2.7794	P<.01
17.	1.5756	2.1665	.6526	.9338	-2.8368	P<.01

\neq Names of variables may be obtained from Table 2.

Table 13.

Critic Teacher's Ratings of Young Matched-and
Unmatched-Group Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Matched</u>	<u>Unmatched</u>	<u>Matched</u>	<u>Unmatched</u>		
1. \neq	1.4847	1.8998	.4996	.6505	-2.7735	P<.01
2.	1.2726	1.4665	.4452	.6698	-1.3171	
3.	1.3029	1.3998	.5212	.5536	- .7018	
4.	1.5150	1.6665	.6089	.6991	- .8982	
5.	1.3332	1.4332	.4713	.4954	- .8055	
6.	1.0908	1.1332	.2873	.3398	- .5232	
7.	1.3938	1.3665	.5470	.5466	.1947	
8.	1.3635	1.5998	.5937	.6632	-1.4601	
9.	1.4544	1.3998	.5553	.6632	.3466	
10.	1.6059	1.7332	.5470	.6288	- .8395	
11.	1.3029	1.4332	.5212	.5586	- .9389	
12.	1.3332	1.8665	.4713	.6698	-3.5617	P<.001
13.	1.2120	1.1665	.4087	.3725	.4547	
14.	1.4241	1.6332	.5520	.6573	-1.3378	
15.	1.5150	1.5665	.5570	.6673	- .3253	
16.	1.2120	1.6332	.4771	.7950	-2.4769	P<.05
17.	1.3635	1.5332	.5402	.5616	-1.1998	
18.	1.3938	1.5000	.4885	.5626	- .7826	
19.	1.4544	1.5998	.4978	.6109	-1.0125	
20.	1.4241	1.5665	.5520	.5586	- .9997	
21.	1.2726	1.4332	.5087	.7155	-1.0008	
22.	1.3635	1.4665	.5402	.5616	- .7282	

\neq Names of variables may be obtained from Table 3.

Table 14.

Principal's Ratings of Young, Matched- and Unmatched-
Group Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Matched</u>	<u>Unmatched</u>	<u>Matched</u>	<u>Unmatched</u>		
1. \neq	2.2726	2.0998	.8967	.7894	.8002	
2.	2.0908	1.8332	.9648	.7780	1.1523	
3.	2.3332	1.9665	.8760	.7519	1.7584	
4.	2.3029	2.1998	.8697	.7482	.4974	
5.	2.1514	1.6998	.8208	.8224	2.1435	$P < .05$
6.	2.0908	1.8332	.9329	.7780	1.1747	
7.	2.0908	1.9665	.8297	.9121	.5547	
8.	2.2726	1.9332	.8623	.8136	1.5812	
9.	2.3332	1.8998	1.0346	.7460	1.8887	
10.	2.1514	2.0000	.7434	.8163	.7550	
11.	2.0908	2.0000	.9957	1.1831	.3228	
12.	2.1514	2.1332	.9883	.8054	.0791	
13.	2.1817	1.8665	.9029	.8843	1.3762	
14.	2.3332	2.0998	.7653	.7460	1.2052	
15.	2.5150	2.1998	.9572	.8325	1.3750	
16.	2.6968	2.5000	.7970	.8464	.9327	
17.	2.2120	2.1998	.8440	.7915	.0582	
18.	2.2120	2.2332	.9130	.8824	-.0921	
19.	2.3635	2.3332	.9150	.9066	.1297	
20.	2.3938	2.3332	.9190	.9774	.2487	
21.	2.3332	2.0998	.8760	.9779	.9778	
22.	2.3029	2.1998	.8697	.7915	.4846	

\neq Names of variables may be obtained from Table 3.

Table 15.

MMPI Scores of Young, Matched- and Unmatched
Group Teachers

<u>Variable</u>	<u>Means</u>		<u>S.D.</u>		<u>t value</u>	<u>Significance Level</u>
	<u>Matched</u>	<u>Unmatched</u>	<u>Matched</u>	<u>Unmatched</u>		
1. \neq	15.0000	15.4332	2.3093	1.8739	-.8077	
2.	21.7574	21.0998	3.1432	2.4676	.9130	
3.	21.6665	22.0998	1.9795	1.8501	-.8835	
4.	21.3938	21.3332	1.5750	1.4680	.1554	
5.	36.3938	35.9332	1.7396	1.9820	.9603	
6.	10.2423	10.1665	1.0738	1.0353	.2805	
7.	28.2120	26.4332	2.3836	5.3582	1.6461	
8.	28.2726	27.0000	3.2404	2.8981	1.6192	
9.	20.0000	19.2332	2.1601	1.9266	1.4651	
10.	29.0604	28.3998	3.6756	3.2720	.7425	

~~Names~~ Names of variables may be obtained from Table 5.

critic teachers and principals usually were not correlated, even though the latter groups used the same instrument to rate mature teachers. And, those ratings by critic teachers which did reach statistical significance were usually negatively related to principal's evaluations. To be more specific, none of the ratings by major professors were closely correlated ($P < .01$) with any of the ratings by principals. Critic teacher's ratings of emotional stability were significantly ($P < .01$) negatively correlated with most of the principal's ratings, including ratings of emotional stability ($P < .05$). Critic teachers ratings of adaptability were negatively correlated only with principal's ratings of voice and use of a variety of materials in the classroom. Ratings by the former on use of a variety of materials were negatively correlated with principal's ratings of ability to decide on appropriate classroom objectives and record-keeping ability. Critic teacher's evaluations of mature teacher's ability to select and plan appropriate classroom activities were negatively correlated with principal's ratings of these subject's adaptability, ability to decide on appropriate classroom objectives, and ability to direct learning activities. Ratings by critic teachers of professional attitudes were negatively related to principal's ratings on initiative. None of the other ratings by critic teachers were significantly correlated at the one per cent level or beyond, with any principal's ratings. These data are presented in Table 16.

Scores on the MMPI scales relating to depression, hypochondriasis, and social introversion tended to be positively correlated with principal's ratings. Social introversion scores were significantly correlated with nearly every rating by principals. Hypomania scale scores were negatively related to almost all the principal's evaluations. Please see Table 17. None of the measures of academic ability (ACE scores, cumulative and education courses GPA) was significantly related to any ratings by principals.

As might be expected, most of the principal's ratings were significantly and positively intercorrelated. The highest correlations (all with $P < .001$) were among ability to decide upon appropriate objectives and a) knowledge of subject matter ($r = .71$) as well as b) knowledge of teaching principles ($r = .68$). Knowledge of subject matter was also closely related to knowledge of teaching techniques ($r = .74$). Adaptability and sense of humor were highly correlated ($r = .67$). Generally speaking, ratings of personal appearance (attractiveness) and health (vitality) were least related to the other ratings. These data are presented in Table 18.

Table 16.

Significant Correlations Between Ratings of Mature Teachers
by Principals, Major Professors and Critic Teachers.

Principal's Ratings		Major Professor's Ratings					Critic Teachers Ratings									
	Scholar-ship	Use of English	Leadership	Initiative	Personal Habits	14	3	4	6	8	11	13	16	17	18	22
1. Intelligence	.30		.28													
2. Reliability							-.38									
3. Emotional Stability							-.30									
4. Initiative												-.36				
5. Attractiveness					.31		-.28			.28	-.28					-.32
6. Considerateness							-.30								-.28	
7. Enthusiasm							-.31									
8. Adaptability															-.37	
9. Humor						-.29	-.29						-.34		-.29	
10. Voice	.31			.28			-.53		-.29	-.36						
11. Health																

Table 16 Con't.

Principal's Ratings		Major Professor's Ratings					Critic Teachers Ratings									
	Scholarship	Use of English	Leadership	Initiative	Personal Habits	1	3	4	6	8	11	13	16	17	18	22
12. Subject Matter Knowledge	.33						-.43									
13. Professional Attitudes							-.32	.36								
14. Principles	.29	.32					-.44		-.31	-.30						
15. Pupil Growth							-.29									
16. Objectives							-.40					-.30		-.36	-.36	
17. Material Variety							-.35			-.42		-.28				
18. Planning						-.28	-.31						-.29			
19. Directing Learning							-.34								-.38	
20. Teacher-Pupil Relations							-.50									
21. Record-keeping															-.41	-.29
22. Evaluation of Pupil Achievement							-.41									

Key for Table 16.

Names of variables may be obtained from Principal's ratings.

$r = 7.2701$, $P = < .05$

$r = 7.3541$, $P = < .01$

$r = 7.4700$, $P = < .001$

Table 17.

Significant Correlations Between Principal's Ratings
and MMPI Scores of Mature Teachers.

Principal's Ratings	MMPI Scales						
	Hys- teria	Depres- sion	Hypochon- driasis	Psycho- pathy	Schizo- phrenia	Hypo- mania	Social Introversion
1. \neq		.41	.31		.39	-.30	.57
2.						-.29	
3.		.33	.37			-.32	.43
4.		.38				-.40	
5.							
6.						-.51	.32
7.		.39				-.30	.44
8.		.41				-.39	.43
9.		.41				-.36	.40
10.	.33	.28	.30		.37	-.37	.55
11.							
12.		.30				-.42	.53
13.						-.33	.30
14.			.31			-.35	.60
15.		.43	.37				.48
16.		.44		.29		-.49	.54
17.	.40	.36		.39			.32
18.	.30	.40				-.35	.57
19.		.30		.47		-.29	
20.		.31	.40			-.32	.60
21.		.45	.41			-.46	.60
22.		.42	.35			-.55	.60

\neq Names of variables may be obtained from Table 16.

Key: $r \geq .2701$, $P \leq .05$ -- $r \geq .3541$, $P \leq .01$ -- $r \geq .4700$, $P \leq .001$

Table 18.

Significant Intercorrelations Among Principal's
Ratings of Mature Teachers

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. \neq																						
2.	40																					
3.	50	29																				
4.	46	50																				
5.	30	32	39	31																		
6.	34	36	39		38																	
7.	38	56	45	51	33	34																
8.	54	46	49	47		38	44															
9.	53	40	49	44	32	39	57	67														
10.	49	35	35	44		30	40	39	46													
11.		40	45		27		54	40	46													
12.	62	46	58	53	51	28	59	52	56	48	33											
13.	36	50	36	34		45	52	43	34	31	31	34										
14.	50	47	48	45			48	45	56	63	33	74	36									
15.	62	46	60	46	33	30	55	50	52	43	45	56	30	49								
16.	61	46	58	50	47	32	51	54	54	58		71	32	68	50							
17.	42		37	56			37	50	50	47	34	49	41	60	50	46						
18.	53	36	48	33		42	50	44	50	46		64	41	59	47	47	46					
19.	32	45	30	53		30	35	61	43	33		44	40	43	55	48	56	47				
20.	39	43	48			41	35	29	40		45	50	48	43	33	35	53	43				
21.	52	31	46			36	43	60	48	49	32	40	44	44	40	55	32	47	39	43		
22.	46		46	32		45	37	28	29	40		51		50	40	55		47		39	53	

\neq Names of variables may be obtained from Table 16.

Key: $r \geq .2701$, $P \leq .05$ $r \geq .3541$, $P \leq .01$ $r \geq .4700$, $P \leq .001$

Number of children of mature teachers was negatively related to principal's ratings of teacher enthusiasm ($r = -.40$, $P < .01$), selecting and planning ability ($r = -.33$, $P < .05$), and ability to judge pupil achievement ($r = -.30$, $P < .05$).

b) Young matched-group teachers.

Major professor's ratings of this group were almost unrelated to evaluations by principals. The only correlation which achieved significance at the one per cent level was between professor's ratings of leadership and principal's ratings of reliability. Critic teacher's evaluations were unanimously positively correlated with principal's ratings. These findings are in striking contrast to the previous data for mature teachers. Even so, critic teacher's evaluations adequately predicted only principal's ratings of intelligence and reliability, as well as the professional abilities of selecting, planning, and directing appropriate learning activities, and working with individual pupils. These data are summarized in Table 19.

MMPI scores reflecting schizophrenia and withdrawal from social contacts were positively and highly correlated with every principal evaluation. Positive and rather strong correlations also appeared between unfavorable psychological attributes of depression, psychopathy, and psychasthenia and principal's ratings. No negative correlations appeared in these data, which are presented in Table 20. Correlations for this group differed significantly from correlations for mature teachers on the hypochondriasis, hypomania, psychopathy, paranoia, psychasthenia, and schizophrenia.

All but 2 of the intercorrelations among principal's ratings were significant, primarily at the one per cent level or better. See table 21. The strongest relationships appeared among reliability and a) intelligence ($r = .85$), b) ability to decide on appropriate objectives ($r = .79$), and c) knowledge of subject matter ($r = .84$). Ability to select and plan a variety of appropriate learning activities was highly correlated with use of a wide range of instructional materials ($r = .85$) as well as skill in directing learning activities ($r = .85$). Intercorrelations among ratings tended to be higher for this group than for mature teachers.

Education GPA was positively correlated with principal's ratings of teacher health ($r = .46$, $P < .01$) and record-keeping ability ($r = .36$, $P < .05$). ACE scores and cumulative GPA were not significantly related to any ratings by principals.

c) Young unmatched-group teachers.

Major professor's ratings of cooperativeness and initiative were negatively related to principal's ratings on

Table 19.

Significant Correlations Between Ratings of Young
Matched-Group Teachers by Principals, Major Professors, and Critic Teachers.

Principal's
Ratings

	Cooper- ativeness	Leader- ship	Judg- ment	Tact	1	4	5	10	12	14	16	17	20	21	22
1.					.38			.47		.50			.47	.38	.37
2.	.37	.48	.40		.47			.53		.44			.42	.44	.38
3.							.39				.42				
4.							.42								
5.									.37						
6.			.36					.37					.37		
7.															
8.							.37								
9.															
10.										.36					
11.						.37				.43					
12.		.36			.46					.44			.35		
13.							.36								
14.							.36								
15.					.36		.36								
16.							.35								

Table 19 Con't.

Principal's
Ratings

	Cooper- ativeness	Leader- ship	Judg- ment	Tact	1	4	5	10	12	14	16	17	20	21	22
17.															
18.		.38		.35		.35		.35		.42				.36	
19.							.49	.35						.35	
20.							.54	.43				.36		.45	.35
21.							.46	.40							
22.															

Names of variable may be obtained from Table 16.

Key:

$r=7.3449$, $P<.05$

$r=7.4540$, $P<.01$

$r=7.5808$, $P<.001$

Table 20.

Significant Correlations Between Principals Ratings and MMPI
Scores of Young, Matched-Group Teachers

Principal's Ratings	MMPI Scales						
	Hys- teria	Depres- sion	Psycho- pathy	Para- noia	Psych- asthenia	Schizo- phrenia	Social Introversion
1. \neq		.49	.37	.50	.36	.71	.47
2.		.64		.42	.41	.70	.40
3.			.48		.55	.47	.65
4.		.40				.59	.52
5.		.46		.61		.56	.51
6.		.45	.55	.46	.43	.69	.56
7.				.35	.39	.61	.58
8.					.38	.59	.62
9.			.37		.35	.46	.54
10.		.43	.54		.39	.49	.56
11.		.40				.53	.47
12.		.68		.37	.36	.64	.43
13.		.40				.70	.41
14.			.39		.48	.60	.54
15.	.47	.40	.43	.35	.59	.59	.62
16.		.48		.44		.63	
17.		.51		.44		.52	.53
18.		.64		.57		.73	.51
19.		.42	.38	.53		.68	.52
20.			.46	.43		.64	.42
21.		.36	.59		.46	.59	.40
22.		.43	.64		.60	.60	.63

\neq Names of variable may be obtained from Table 16.

Key: $r = .3449$, $P < .05$ — $r = .4540$, $P < .01$ — $r = .5808$, $P < .001$

Table 21.

Significant Intercorrelations Among Principal's Ratings of Young,
Unmatched-(lower left) and Matched-(upper right) Groups of Teachers

Principal's Ratings	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. \neq		85	66	52	60	73	74	69	72	71	75	74	76	62	58	79	60	74	73	60	58	71
2.	73		57	58	52	76	63	52	64	61	75	84	71	57	47	78	72	84	72	47	61	62
3.	45	62		54	48	63	71	72	61	71	52	50	54	60	73	54	48	56	64	63	61	74
4.	47	46	49		57	56	63	54	43	54	63	69	59	49		61	70	68	66	53	58	48
5.	51	49		42		69	74	50	40	46	58	53	54	45	40	67	52	64	65	48	52	61
6.	62	67	45	40	55		73	61	69	59	68	58	66	68	56	65	59	72	74	59	74	75
7.	42	46		60		46		77	53	52	69	54	71	57	55	73	53	57	63	51	58	63
8.	79	67	43	46		67	63		58	55	57	38	71	64	56	52	38	47	57	59	48	62
9.	64	66		63	39	60	68	81		76	68	51	61	66	53	53	65	66	54	40	58	73
10.	41			49			63	65	60		55	59	55	60	57	44	58	67	54	62	62	77
11.	46			38		47	83	73	64	66		69	66	48		80	66	75	63	42	56	49
12.	61	62		67	41		60	57	69	51	56		61	53	49	79	76	84	74	37	57	62
13.	69	69	44	59	45	50		50	64			49		66	45	75	59	65	69	57	54	66
14.				62		37	69	45	56	57	48				76	51	59	68	69	63	69	80
15.	48	57	38	63		41	53	56	78	49	51	81	44	56		40	46	60	69	60	59	80
16.	62	53		53	60	43	71	53	61	39	63	68	58	61	57		68	75	73	41	54	57
17.	45	53		78	45	43	61	59	77	46	53	79	61	59	75	65		85	68	40	44	57
18.	49	49		79	37	49	75	67	85	69	73	80	47	67	80	60	89		85	59	67	68
19.	56	50		79	49	60	74	62	79	54	69	76	55	64	75	69	79	86		66	72	74
20.	56	42		64		64	65	70	73	75	66	49		64	66	44	56	80	74		63	61
21.		46	50	56	41	42							45	48	40	59	38	40	40	56	45	78
22.	39	49		72		49	47	43	71	46			74	51	47	75	45	73	79	65	66	

\neq Names of variables may be obtained from Table 16.

Key for Table 21.

Unmatched Teachers:

$r = .3626$, $P = < .05$

$r = .4770$, $P = < .01$

$r = .6105$, $P = < .001$

Matched Teachers:

$r = .3449$, $P = < .05$

$r = .4540$, $P = < .01$

$r = .5808$, $P = < .001$

attractiveness. Several other professor's ratings were negatively correlated with principal's views of these teacher's ability to decide on appropriate learning objectives. A few positive correlations appeared, particularly between a variety of professor's ratings and principal's ratings of teacher ability to evaluate pupil achievement. All of these relationships were weak ($P < .05$). It is perhaps noteworthy that only for this group was professor's ratings on probable teaching ability related to any of the principal's evaluations.

Critic teacher's ratings yielded more significant positive correlations with principal's ratings of this teacher group than with the previous groups. Three negative correlations also appeared, between critic teacher's ratings on intelligence and knowledge of subject matter and principal's views of teacher attractiveness, as well as between critic teacher's ratings on student teacher ability to evaluate pupil achievement and principal's evaluations of these subject's understanding of teaching theory and techniques. Positive relationships existed between a variety of critic teacher ratings and principal's ratings of adaptability, humor, voice, health, and teacher-pupil relationships, including discipline. These findings are summarized in Table 22, a. and b.

MMPI scores: Principal's ratings on all but one variable were negatively correlated ($P < .05$ to $< .01$) with MMPI hypomania scale scores. Positive, but less consistent correlations appeared between several of the variables rated by principals and scores on the hysteria, hypochondrias and psychasthenia scales (See Table 23). These findings for hypomania are similar to results for mature teachers, but are significantly different from the relationships observed for young, matched-group teachers. Correlations obtained for most depression and social introversion scale scores differ significantly among all 3 groups of teachers. In fact, the patterning of correlations between MMPI scores and principal's ratings varied considerably among all subject groups.

Intercorrelations among principal's ratings can be found in Table 21. The strongest correlations were among ability to select and plan learning activities and sense of humor ($r = .85$), use of a wide variety of instructional materials ($r = .89$) as well as ability to direct learning activities ($r = .86$). A similar pattern of intercorrelations appeared in ratings of young, matched teachers, but not of mature teachers. Ratings of health and enthusiasm were also closely related ($r = .83$) for the present group.

For this group, ACE scores were positively correlated with principal's ratings of attractiveness ($r = .40$, $P < .05$) and record-keeping ability ($r = .44$, $P < .05$). Principal's ratings

Table 22a.

Significant Correlations Between Ratings of Young, Unmatched-
Group Teachers by Principals and Major Professors.

Principal's Ratings		Major Professor's Ratings														
		a) Scholar-ship	b) Use of English	c) Attitude Toward Work	d) Depend-ability	e) Coopera-tiveness	f) Leader-ship	g) Judgment	h) Tact	i) Init-iative	j) Industri-ousness	k) Social Qualities	l) Person-ality	m) Voice	n) Personal Habits	o) Probable Teaching Ability
1.	✓															
2.																
3.																
4.																
5.						-.38				-.42						
6.															.39	
7.												.45				
8.																
9.																
10.																
11.												.41				
12.																
13.																

Table 22a Con't.

Principal's Ratings Major Professor's Ratings

	a)	* b)	c)	d)	e)	f)	g)	h)	i)	j)	k)	l)	m)	n)	o)
14.											.38				
15.															
16.		-.44	-.38		-.40					-.40					
17.															
18.								.41			.42				
19.															
20.								.37							
21.															
22.	.38			.39		.44	.39	.40				.37	.41		.45

Key:

Names of variables may be obtained from Table 16.

* Refer back to first page of Table 22a.

r=7.3626, P<.05

r=7.4770, P<.01

r=7.5105, P<.001

Table 22b.

Significant Correlations Between Ratings of Young, Unmatched-
Group Teachers by Principals and Critic Teachers.

Principal's
Ratings

Critic Teacher's Ratings

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1.											.43											
2.																					.45	
3.																						
4.																						
5.												-.50										
6.							.45				.40										.45	
7.							.43		.52			.41							.39			
8.						.40	.43		.49	.58		.39	.38	.37				.42	.45			
9.				.38	.39	.42	.42		.48	.37	.42	.40	.51							.46		
10.				.41	.49	.37	.37	.37	.49	.45	.51	.43	.49					.47				
11.				.44	.45	.41	.42	.42	.59	.40	.45	.38	.51	.38				.40	.51			
12.																						
13.																						
14.					.42	.40			.39													-.46
15.					.44					.39		.44	.46									
16.																						
17.																						
18.				.45	.38				.47			.38	.45									

Table 22b Con't.

Principal's
Ratings

Critic Teacher's Ratings

	1	4	5	7	8	9	10	11	12	13	14	15	17	19	20	21	22
19.			.49					.37			.37						
20.		.41	.60	.40		.41	.47	.53			.50	.48				.51	
21.			.39														
22.	.43		.46									.42					

Key:

≠ Names of variables may be obtained from Table 16.

$r = >.3626$, $P = <.05$

$r = >.4770$, $P = <.01$

$r = >.6105$, $P = <.001$

Table 23.

Significant Correlations Between Principal's Ratings and MMPI
Scores of Young, Unmatched-Group Teachers

Principal's Ratings		MMPI Scales						
	Hys- teria	Hypo- chondria	Psycho- pathy	Para- noid	Psycho- asthenia	Schizo- phrenia	Hypo- mania	Social Introversion
1. \neq						.58	-.50	
2.					.39		-.53	
3.							-.43	
4.	.37				.41		-.59	
5.				.45				
6.						.43	-.49	
7.	.38						-.68	
8.						.41	-.50	
9.	.38				.38		-.49	
10.		.38					-.45	
11.							-.44	
12.	.54	.37			.50		-.58	
13.						.47	-.55	
14.	.47						-.64	.45
15.	.54	.48			.50		-.51	
16.							-.64	
17.	.50				.45		-.53	
18.	.54	.43			.45		-.56	
19.	.60						-.65	
20.		.42	.41				-.50	
21.	.54				.39		-.43	
22.	.66	.37	.49		.55		-.53	

\neq Names of variables may be obtained from Table 16.

Key: $r = .73626$, $P = < .05$ -- $r = .4700$, $P = < .01$ -- $r = .6105$, $P = < .001$

of personal appearance were also positively related to cumulative GPA ($r=.42$, $P<.05$). Education GPA was positively related to principal's evaluations of teacher ability to evaluate pupil development ($r=.40$, $P<.05$), ability to decide on appropriate educational objectives ($r=.43$, $P<.05$) and record-keeping skill ($r=.37$, $P<.05$). Number of children was negatively correlated with principal's opinions regarding ability to judge pupil growth ($r= -.39$, $P<.05$).

Conclusions

1. Characteristics of mature women teachers.

The present study reveals some rather exciting findings regarding characteristics of women who are over 35 years of age at the time they assume their first professional teaching responsibilities. These teachers are typically married, have 2 or more children, and reside in middle-class suburban homes. Academically, these women perform at a level superior to that of teachers of conventional college age. Older women tend to be better adjusted personally than younger teachers, especially in the realms of psychotic and psychopathic disturbances. As a group, mature women are sociable, friendly, even-tempered, and cheerful. They are generally more stable, modest and conventional in their actions than are young teachers.

Professionally, mature women are viewed by their employing principals as superior teachers in almost every respect imaginable. This finding applies to the comparisons between both matched and unmatched groups of young teachers. Thus, any difference between age groups in academic ability cannot account for these data. Mature teachers are also evaluated more favorably by professors teaching in their major academic areas. However, these ratings do not distinguish clearly between mature and young teachers. Teachers who supervised the subject's practice teaching viewed mature women more favorably than the unmatched group but not the matched group of young teachers. This tendency of critic teachers to perceive young teachers more favorably than mature teachers with a similar level of academic achievement, does not coincide with principal's evaluations. It suggests that critic teachers may have negative attitudes toward older student teachers.

The above findings regarding the academic achievement of mature women are in accord with results of prior research indicating that older women students compete successfully in undergraduate college courses of all types. In fact, women undergraduates 40 years of age and over performed better in every academic area sampled than women between 18 and 25 years of age at 2 Chicago universities (8). It is possible that the mature women in the present study were basically more intelligent than the younger students. However, a previous study by the present writer did not support this hypothesis (6).

Older women students performed at a level inferior to that of younger women on the Digit Symbol and Block Design subtests of the Wechsler Adult Intelligence Scale. These are

performance subtests, and are viewed as measures of abstract reasoning ability and ability to concentrate on details (2). There was no age difference in performance on 2 WAIS verbal reasoning subtests; Similarities and Comprehension. These findings are in accord with the tendency of scores on speeded tasks to decrease significantly with age, while there is little age change in scores on tests of verbal skills (3). Nevertheless, age-related declines in intellectual abilities are probably not a significant variable in the present study, since longitudinal studies have shown that general intellectual ability actually increases until age 60 (1).

One could argue that mature women who return to college are at least intellectually superior to women of the same age who do not return. That is, mature coeds may be a select group who do not represent the general population. There is very little data relevant to this point, except that a study at the Oakland University Continuum Center revealed that mature women who returned to college scored lower on the Vocabulary scale of the Cooperative English Test than did a matched group of non-college women (10). Since the vocabulary test was a measure of intelligence, these data obviously do not favor an interpretation that mature women achieve ably in college courses because they possess superior intelligence.

It is possible that women who return to college perform well through sheer motivation to do so. This alternative certainly seems plausible, in view of the inconveniences, frustrations, anxieties, etc. which seem to characterize their return (12). Research by the writer suggested that mature women are more highly motivated than younger women to achieve in college (6). For example, a significantly greater proportion of mature than young women felt they should perform at a level superior to other students. Also, the mature women spent more time studying, and had more systematic study habits relative to the younger women. Mature women did not perceive themselves as having more academic difficulties than younger students. In fact, more younger women reported poor memory as a major academic problem.

Thus, older women do not appear to be handicapped by age in academic situations designed for younger learners. It is possible that these mature women students are so highly motivated to succeed in their college careers that they are able to overcome any age-related deficits in learning abilities. Or, these women may not experience any outstanding academic problems.

The ratings of principals employing older teachers suggest that the former are enthusiastic about the performance of these women. This finding should probably be given

serious consideration in plans for attracting these women to the teaching profession. This is particularly so, in view of the findings that some college professors and critic teachers did not see mature students so favorably. It is quite possible that mature women may be discouraged from entering teaching by college and public school personnel.

While these findings are quite intriguing, they must be interpreted cautiously. The samples in this study were relatively small, and consisted of a rather select group, namely, women able to attend a small, private, liberal arts college. Further research is needed to determine whether these results also apply to a broader sample of mature women teachers, including those matriculating at public institutions.

The data relevant to young teachers suggests that cumulative GPA is associated with judgments of teaching effectiveness, since both major professors and critic teachers rated young teachers with a higher GPA more favorably than they rated the group with an average GPA. Unfortunately, these evaluations did not coincide with principal's ratings since principals perceived the group with the lower GPS as the better teachers.

2. Predictions of teaching effectiveness.

The correlational data yielded two general findings. First, the measures employed were poor predictors of principal's ratings of teaching ability. This conclusion applies to measures of academic achievement and to judgments by professional persons. Second, the intercorrelations among predictor measures varied substantially among the three samples investigated. The findings for each group of subjects are discussed below.

a) Mature teachers.

For this group of teachers, the best predictors of teaching effectiveness were unfavorable evaluations by critic teachers, particularly of emotional stability. Academic achievement was unrelated to principal's ratings, possibly because the mature teachers performed so well on these measures. Major professors ratings of scholarship were the best predictors of principal's ratings, including judgments of intelligence. It seems reasonable to assume that college faculty can accurately judge academic achievement and that this characteristic is associated with teaching skills.

b) Young, matched-group teachers.

The outstanding feature in the data for this group was that all judgments were positively correlated. Critic teachers, in particular, were able to predict a number of principal's

judgments. Evaluations, by the former, of attractiveness were especially prominent in this respect. These findings contrast sharply with the results for older teachers. Perhaps predictions are relatively easy to make of this group of young teachers with above-average academic ability. Measures of academic achievement were inadequate predictors of teaching ability, probably because this group was characterized by a high GPA.

The MMPI findings were puzzling, since they imply that unfavorable scores on this test are predictive of favorable evaluations by principals. However, college student normative data suggests that college students of high intelligence typically make somewhat deviant MMPI scores, particularly on the psychopathy and schizophrenia scales. Thus, these data could reflect a high degree of originality and perceptiveness among these teachers which is valued by principals. As was the case for mature teachers, controlled, subdued behavior was positively related to favorable evaluations by principals.

c) Young, unmatched-group teachers.

Critic teacher's evaluations were better predictors of principal's ratings for this group than for the previous groups. A few of the relationships between these two sets of ratings were negative, but many positive correlations also appeared. There was particularly good agreement on judgments of personality attributes. Perhaps this group, which represents a random sample of young teachers, was the most familiar to the judges and thus easier to assess accurately.

Major professor's ratings were not strongly associated with principal's evaluations. The negative correlations in these data suggest that professors may use different criteria from principals for judging teacher effectiveness. It is noteworthy that for this group only, several measures of academic achievement were positively related to principal's ratings. This finding supports the results of other research in which a low, positive correlation existed between principal's ratings of teaching ability and GPA or measures of general intelligence (14). Possibly these criteria of academic ability are useful predictors only for a group which is quite heterogeneous in this respect.

The intercorrelations among principal's ratings were stronger for this group and for the young, matched-group teachers than for the mature teachers. Principals apparently rate young teachers more consistently than they do older ones.

The only outstanding relationship observed in the MMPI data for this group was the negative association between hypomania scale scores and principal's ratings. Principal's

apparently view as effective teachers, those women whose behavior is composed and orderly. Nevertheless, this relationship did not appear in the data for young, matched-group teachers.

The findings for young women imply that predicting the teaching effectiveness of this group is difficult but not impossible. Since different relationships exist for groups characterized by average and high cumulative GPAs, varying sets of predictors may need to be established for each of these groups. While the judgments of critic teachers are useful predictors, more effective measuring instruments need to be developed for these groups.

In summary, these points can be made regarding predictions of teacher effectiveness among older teachers. Mature women in this study were viewed as highly effective by their employing principals. However, their potential effectiveness cannot be predicted accurately from judgments of critic teachers or major professors. The potential of mature teachers cannot be predicted from measures of academic achievement because these women are uniformly high achievers in academic situations. Personality test scores which reflect calm, controlled, unaggressive behavior may be a useful indicator of later teacher success. However, the MMPI scores of mature women were within the normal range of scores for this age group. And, these scores were generally indicative of a more "normal" level of adjustment than were the scores of younger teachers.

Thus, these data do not provide adequate predictor measures of teacher effectiveness among older women, unless one is willing to base judgments of future teaching ability upon unfavorable evaluations by critic teachers. One source of difficulty may be the fact that mature women performed well on all the measures investigated. If these findings are supported by the results of future research, the prediction of teaching effectiveness among mature teachers is a rhetorical issue.

Further research in this area might be directed first, toward studies at other institutions to determine whether the relationships observed in this investigation exist elsewhere. If they do, attempts might be made to encourage mature women to enter teaching, as well as to improve the attitudes of professional educators in higher institutions toward these women. These steps would seem appropriate if we are to take advantage of the highly effective teacher who begins her professional career after the age of 35.

The negative correlations between critic teacher's and principal's judgments suggest a possible bias in evaluations of this group. Most of the critic teachers were younger than the mature teachers they supervised. Conversations with both groups indicated that this age difference, and attitudes relating to it, was a source of antagonism between these teacher groups. On the one hand, the critic teachers expressed feelings that their mature student teachers frequently did not respect their authority, as they often questioned the critic teacher's reasons for teaching as they did, or they offered the supervising teacher suggestions for improving the classroom situation. Some, but not all critic teachers, said they approved of the more docile behavior exhibited by younger student teachers. On the other hand, many of the mature teachers said they felt their critic teachers treated them inappropriately by not acknowledging the fact that they had more general experience than the critic teacher, including children of their own, and therefore, might know how to relate to pupils in the classroom. These attitudes might well have contributed to the inability of critic teachers to predict principal's ratings of mature teacher's ability.

The MMPI findings suggest that the personality characteristics measured by this test may aid in predictions of teacher effectiveness. Apparently, principals view as effective teachers those mature women who are calm, poised and moderately introverted. Excessive activity, as reflected in the hypomania scores, is viewed unfavorably. The MMPI results suggest that these women are emotionally stable, although these data contradict the ratings of critic teachers. Mature teachers appear to be responsible, calm, and controlled although they are socially outgoing. The latter three attributes were found to characterize teachers in a previous investigation (7). Having several of one's own children did not appear to improve teacher effectiveness, at least in the eyes of principals. The high negative correlation between number of children and principal's judgments of teacher enthusiasm may reflect teacher fatigue due to household responsibilities. Teacher enthusiasm is known to be positively correlated with pupil achievement and favorable pupil attitudes (11). However, the highly favorable evaluations of mature teachers by principals suggests that these women are not handicapped by any possible lack of enthusiasm. Also, the correlations for hypomania scores imply that principals prefer teachers who are composed and somewhat shy. The inter-correlations observed among principal's ratings suggest that teacher ability to use appropriate information and techniques are prime factors underlying principal's judgments.

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Please give this form to your Major Professor. Upon completion, he will return it to the Office of Teacher Placement, Department of Education.

Name of Professor _____ Student _____

First Field _____; Second Field _____

The above student has enrolled with us as a candidate to teach in the fields indicated above and refers to you as one who can speak of his (or her) character, scholarship, and probable success as a teacher. Kindly indicate your estimate by checks on the scale below and also by comment. Rate the candidate on all the traits in which you feel willing and competent to pass judgment. In the interest of the candidate and for the convenience of the committee, please return this blank promptly.

	Poor	Fair	Good	Very Good	Excellent
Scholarship					
Use of English					
Attitude toward Work					
Promptness and Dependability					
Cooperativeness					
Leadership					
Judgment					
Tact					
Initiative					
Industriousness					
Force of Character					
Social Qualities (Ease in meeting people)					
Personality (Total Impression)					
Voice					
Personal Appearance (Dress, Neatness)					
Personal Habits					
Probable Teaching Ability					

Please write a concise statement characterizing candidate's general ability. Use other side if necessary.

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Date: _____ Signature: _____

NORTH CENTRAL COLLEGE
NAPERVILLE, ILLINOIS
RATING SCALE FOR STUDENT TEACHING

Name of Student Teacher _____ Date _____
 Name of Critic Teacher _____ Grade: Final _____
 School and Address _____ Subject _____
 _____ Grade Level _____

Personal Qualities:

	High			Low
1. Intelligence (judgment, foresight) _____	1	2	3	4 5
2. Reliability (promptness, dependability, conscientiousness, sense of responsibility) _____	1	2	3	4 5
3. Emotional stability (professional poise, even temper) _____	1	2	3	4 5
4. Initiative (originality, creativeness, resourcefulness) _____	1	2	3	4 5
5. Attractiveness (appearance, dress, manner) _____	1	2	3	4 5
6. Considerateness (courtesy, tact, sympathy) _____	1	2	3	4 5
7. Enthusiasm (interest) _____	1	2	3	4 5
8. Adaptability _____	1	2	3	4 5
9. Sense of humor _____	1	2	3	4 5
10. Voice (modulation, expressiveness, use of English) _____	1	2	3	4 5
11. Health (vitality, energy, drive) _____	1	2	3	4 5

Professional Qualities:

1. Knowledge of subject matter (breadth and accuracy of knowledge, scholarship, interest in subject) _____	1	2	3	4 5
2. Professional attitudes (interest in teaching, open-mindedness, cooperation, receptivity to criticism) _____	1	2	3	4 5
3. Knowledge of principles and techniques of teaching _____	1	2	3	4 5
4. Understanding pupil growth and development _____	1	2	3	4 5
5. Ability in deciding on appropriate objectives _____	1	2	3	4 5
6. Ability in using a variety of instructional materials (resources, equipment, text-book, other material) _____	1	2	3	4 5
7. Ability in selecting and planning a variety of appropriate learning activities _____	1	2	3	4 5
8. Ability in directing learning activities _____	1	2	3	4 5
9. Ability in teacher-pupil relationships (including discipline, working with individual pupils) _____	1	2	3	4 5
10. Ability in classroom management (keeping of records accurately and neatly) _____	1	2	3	4 5
11. Ability in evaluating pupil achievement _____	1	2	3	4 5

Descriptive statement of student teacher (including estimate of probable success as a teacher):